W2 Quick reference Programming Guide	
Function description	Choose from the relevant function below and input
Enter the programming mode	* 888888 # then you can do the programming (888888 is the default factory master code)
To exit the programming mode	*
Note: that to undertake the following programming the master user must enter into the programming mode	
Change the master code	0 New code # Repeat New code # (Code must be 6-8 digit numbers.)
Add card user	1 Read Card # (Can add card continuously)
Delete card user	2 Read Card # (Can delete card continuously)
To Unlock the door	
To Unlock the door	Read user card

Attachment: Advanced Application

1. W2 operating as a Controller

In this mode the W2 supports a Wiegand 26 bit input so an external Wiegand device with a 26 bit output can be connected to the Wiegand input terminals on the W2. Either an ID card reader (125 KHZ) or an IC card reader (13.56MHZ) can be connected to the W2. Cards are required to be added at the external reader, except where an external EM reader is used, in this case cards can be added at either reader or controller. See figure 1

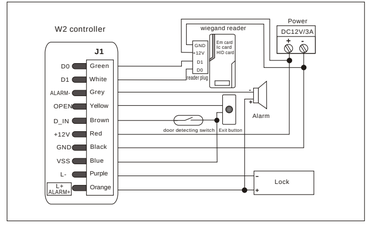


Figure 1

2. W2 operating as a Wiegand Output Reader

In this mode the W2 supports a Wiegand 26 bit output so the Wiegand data lines can be connected to any controller which supports a Wiegand 26 bit input. See figure 2

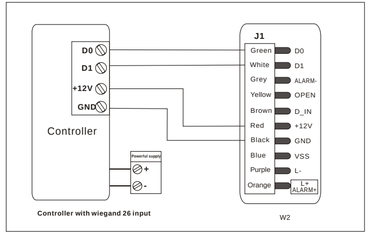


figure 2

3. Two W2 units interconnected for a single door

In this mode two W2 units are used for a single door, one for entry and the other for exit. Either device acts as the controller and reader at the same time. Users can be enrolled in either of the devices. In this mode the user capacity for one door can be up to 20000. The setting of the two W2 units must be the same including the master code. See figure 3

4. Two W2 units interconnected & interlocked for 2 doors

In this mode two W2 units are used for two doors which are then interconnected and interlocked. In this mode the doors can be interlocked so that when door 1 is open, door 2 cannot be opened, and vice versa. The interlocked function is mainly used in banks, prisons, and other places where a higher level of security is required. See figure 4

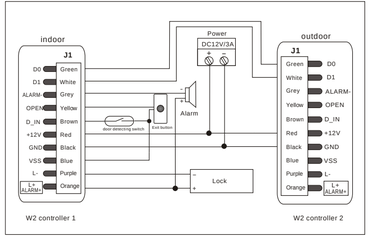


figure 3

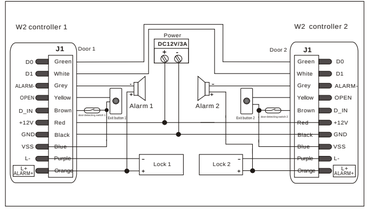


figure 4

5. Anti-submarine function for single door (3 1 #)

The connection diagram is as figure 1. Install one Wiegand reader (or a W2 without user information as reader) outside the door, connecting to one W2-Controller inside the door, which acts as the Anti-submarine Master unit. of the two devices, they build up an anti-submarine system for single door. The operation and function is as below:

5.1 Set the needed function and enroll the User Cards on the inside W2 - Anti-submarine Master unit.

5.2 With the valid user card, the user can only enter the door from the outside reader, and exit from the inside W2 Controller. On the other hand, without entering record from the reader, the user can't exit from the controller inside, also, the user can't enter in twice without the first exit record , and vice versa.

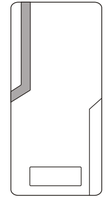
6. Anti-submarine function for 2 doors

The connection diagram is as Figure 4. Door 1 with one W2, and Door 2 with one W2, set one W2 on Door 1 as the Anti-submarine Auxiliary unit (3 2 #), and set the other W2 on Door 2 as the Anti-submarine Master unit(3 1 #). They build up a two doors anti-submarine system, which is normally used for parking lot.....etc.

The operation and function is as below:

6.1 Set the needed function and enroll the User Cards from W2 - Anti-submarine Master unit on Door 2.

6.2 With the valid user card, the user can only enter in from Door 1, and exit from Door 2. On the other hand, without entering record from the Auxiliary unit, the user can't exit from the Master unit or Auxiliary unit, also, the user can't enter in twice without the first exit record , and vice versa.



W2 Waterproof
Standalone Proximity Reader

User manual

1. Packing List

Name	Specification	Quantity
Standalone Proximity Reader	W2	1
Infrared remote control		1
Manager card	One for add, one for delete	2
Short Pin	Used for factory default setting	1
User manual	W2	1
Self Tapping Screws	Φ3.5*27mm	4/2

Please ensure that all the above contents are correct. If any are missing, please notify the supplier of the W2.

2. Description

The W2 is fully waterproof standalone Proximity access Reader, which uses advanced microprocessor, equipped with large capacity Flash memory, supports up to 10,000 cards. It is so easy to add or delete card users by using the master card, besides, with Infrared remote control programmer, the user can set the features by themselves, including Alarm, Self-protection, interlock and Anti-submarine back Function. In additional, with infrared remote control programmer, you can add or delete cards directly by inputting card number.
The W2 not only has the features of low power consumption, automatic selection of lock ,anti vandal alarm and exit button, but also has the protective functions against input over voltage and outputs short-circuit. These features make the W2 safe , reliable and easy in operation. It is an ideal choice for door access.

3. Features

- Standalone Card Reader
- User capacity: 10,000
- Card interface: 125KHZ EM card
- Remote control for programming
- With Manager cards for fast add and delete users
- Wiegand26 input/output
- Can be used as salve reader
- 2 pcs W2 can be interconnected/ interlocked
- Can be used as controller by connecting slave reader
- Anti-submarine back Function
- Alarm signal output, Door open detection
- Full of 10,000 users, recognizing speed <15ms.

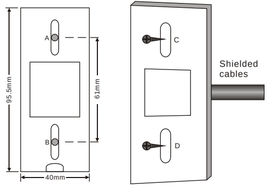
4. Specifications

Supply Voltage	DC12V±10%
Sleeping Current	<15mA
Card type	125KHZ EM card
Card Reading Distance	5～10cm
Wiegand interface	Wiegand 26
User capacity	10,000

Temperature	-20℃～60℃
Humidity	20%～98%
Lock output load	Max20A
Alarm output load	Max20A
Manager card	Two
Dimensions	103 x 48 x23mm

5. Installation

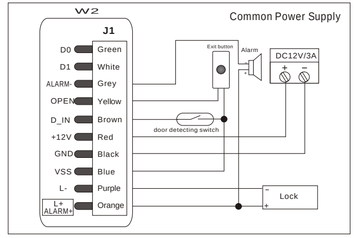
- Drill holes on the wall or prepare the cassette.
- Wire through the hole, and blanket the unused cable in case of short circuit.
- Fix the back cover firmly on the cassette or the wall.
- Attach the reader to the back cover.

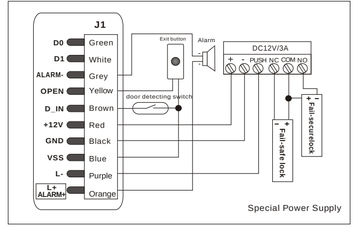


6. Wiring

No	Color	Function	Description
1	Green	D0	Wiegand output, input signal wire D0
2	White	D1	Wiegand output, input signal wire D1
3	Grey	ALARM+	connecting to the negative pole of the alarm equipment
4	Yellow	OPEN	To connect to one part of Exit Button
5	Brown	D_IN	Door Contact input
6	Red	12V	(+) 12Vdc Positive Regulated Power Input
7	Black	GND	(-) Negative Regulated Power Input
8	Blue	VSS	the negative pole of the controller, connect to the other part of Exit button and door contact
9	Purple	L-	Connect to the negative pole of the Lock
10	Orange	L+/Alarm+	Connect to the positive pole of the lock and alarm equipment

Connection Diagram





Do not power on until all wiring has been completed

7. Interface Circuits

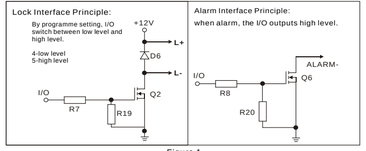


Figure 1

Note: The above diagrams show the output interface circuits. Unlike most lock and alarm outputs which use a relay that can be shocked or magnetized, the W2 uses MOS outputs for both the Lock Output on the left and the Alarm Output on the right.

8. To Reset to Factory Default and Manager Card setting

Power off, use the supplied Contact Pin to short out the 2P socket on the mainboard, then power on, if successful, the beeper will beep twice, the LED shines in orange, remove the Short Pin, then read any two EM cards, after that the LED turns in red, means reset to factory default setting successfully. of the two EM cards read, the first one is Manager add card, the second one is Manager delete card.

Remarks: Reset to factory default setting, the users' information enrolled is still retained. When reset to Factory default setting, the two Manager cards must be re-enrolled.

9. Sound and Light indication

Operation status	LED	Buzzer
Reset to factory default setting	Orange	Two short ring
Sleeping mode	Red shines slow	
Operation successful		Short ring
Enter into programming mode	Red shines	Short ring
Enter into setting	Orange shines	Short ring
Exist from programming mode	Red shines slow	Short ring
Operation failed		Three short ring
Open the door	Green shines	Short ring
Alarm	Red shines fast	Alarm

10. W2 Detailed Programming Guide

10.1 User settings

There are 2 ways to add and delete users:
[A - By manager card] [B - By remote control]

A - By Manager card (The most convenient way)	
To Add user by Manager Card	[Manager add card] [Read user card] [Manager add card] Cards can be added continuously.
To Delete User by Manager Card	[Manager delete card] [Read user card] [Manager Delete card] Cards can be deleted continuously.
B- By Remote control	
To Enter the programming mode	[*] [Manager Password] [#] 888888 is the default factory master code
Remarks: All the steps below must be done after entering into programming mode	
To change the master code	[0] [New Password #] [Repeat New Password #] The master code must be 6~8 digit number.
To add a card user (Method 1)	[1] [Read Card] [#] Card can be added continuously without exiting programming mode.
To add a card user (Method 2)	[1] [Input Card number (8 digit)] [#] The card number is the last 8 digits of the number printing on the card.
To delete a card user	[2] [Read Card #] or [2] [Card number (8digit)] [#]
To delete ALL users. **(Note:** This option will delete all users but Manager Cards. Be careful with use)	[2] [0000] [#]

10.2 Door setting

Lock Power Setting	
Fail secure (Unlocked when power on) This is the factory default, 3 seconds:	[4] [0~99] [#] 0-99 is to set the door relay time 0-99 seconds.
Fail safe (unlocked when power is off)	[5] [0~99] [#] 0-99 is to set the door relay time 0-99 seconds.
Anti-submarine Settings	

Anti-submarine Disabled	[3] [0] [#] (Factory default)
Anti-submarine Master Mode	[3] [1] [#]
Antisubmarine Auxiliary Mode	[3] [2] [#]

(**Note:** the detailed wiring diagram and illustration, please refer to the "Advanced application").

Door open detection
Door Open Too Long (DOTL) warning. When used with an optional magnetic contact or built-in magnetic contact of the lock, if the door is opened normally, but not closed after 1 minute, the inside buzzer will beep automatically to remind people to close the door and continue for 1 minute before switching off automatically.
Door Forced Open warning. When used with an optional magnetic contact or built in magnetic contact of the lock, if the door is forced open, or if the door is opened after 120 seconds of the electro-mechanical lock not closed properly, the inside buzzer and alarm output will both operate.

To disable door open detection. (Factory default)	[6] [0] [#]
To enable door open detection	[6] [1] [#]
Security Mode Setting	
Reader Lockout & Alarm Output options. If there are 10 invalid cards within 10 minutes, the Reader will lockout for 10 minutes or the alarm will operate for 10 minutes, depending on the option selected below.	
Normal status (No lockout or alarm)	[7] [0] [#] (Factory default setting)
Reader Lockout	[7] [1] [#]
Alarm Output	[7] [2] [#]
Door Interlock.	
Door interlock disabled	[8] [0] [#]
Door interlock enabled	[8] [1] [#]
Alarm output time	
To set the alarm output time (0-3 minutes) Factory default is 1 minute	[9] [0~3] [#]
To remove the alarm	
To remove the door forced open warning	[Read valid card] or [Master Code #]
To remove the door open too long warning	Close the door or [Read valid card] or [Master Code #]
To Unlock the door	
To Unlock the door	[Read user card] **Note:** that Manager Card can't be used to unlock the door.